

ABSTRACT

A microcavity discharge device generates radiation with wavelengths in the range of from 11 to 14 nanometers. The device has a semiconductor plug, a dielectric layer, and an anode layer. A microcavity extends completely through the anode and dielectric layers and partially into the semiconductor plug. According to one aspect of the invention, a substrate layer has an aperture aligned with the microcavity. The microcavity is filled with a discharge gas under pressure which is excited by a combination of constant DC current and a pulsed current to produce radiation of the desired wavelength. The radiation is emitted through the base of the microcavity. A second embodiment has a metal layer which transmits radiation with wavelengths in the range of from 11 to 12 nanometers, and which excludes longer wavelengths from the emitted beam.